

B^*

$$I(J^P) = \frac{1}{2}(1^-)$$

I, J, P need confirmation. Quantum numbers shown are quark-model predictions.

B^* MASS

From mass difference below and the average of our B masses $(m_{B^\pm} + m_{B^0})/2$.

VALUE (MeV)	DOCUMENT ID
5325.0±0.6 OUR NEW UNCHECKED FIT	[5324.9 ± 1.8 MeV OUR 1998 FIT]

$m_{B^*} - m_B$

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
45.78±0.35 OUR FIT				
45.78±0.35 OUR AVERAGE				
46.2 ± 0.3 ± 0.8		1 ACKERSTAFF 97M OPAL	$e^+ e^- \rightarrow Z$	
45.3 ± 0.35 ± 0.87	4227	1 BUSKULIC 96D ALEP	$E_{cm}^{ee} = 88\text{--}94 \text{ GeV}$	
45.5 ± 0.3 ± 0.8		1 ABREU 95R DLPH	$E_{cm}^{ee} = 88\text{--}94 \text{ GeV}$	
46.3 ± 1.9	1378	1 ACCIARRI 95B L3	$E_{cm}^{ee} = 88\text{--}94 \text{ GeV}$	
46.4 ± 0.3 ± 0.8		2 AKERIB 91 CLE2	$e^+ e^- \rightarrow \gamma X$	
45.6 ± 0.8		2 WU 91 CSB2	$e^+ e^- \rightarrow \gamma X, \gamma \ell X$	
45.4 ± 1.0		3 LEE-FRANZINI 90 CSB2	$e^+ e^- \rightarrow \Upsilon(5S)$	
• • • We do not use the following data for averages, fits, limits, etc. • • •				
52 ± 2 ± 4	1400	4 HAN	85 CUSB	$e^+ e^- \rightarrow \gamma e X$

¹ u, d, s flavor averaged.

² These papers report E_γ in the B^* center of mass. The $m_{B^*} - m_B$ is 0.2 MeV higher. $E_{cm} = 10.61\text{--}10.7 \text{ GeV}$. Admixture of B^0 and B^+ mesons, but not B_s .

³ LEE-FRANZINI 90 value is for an admixture of B^0 and B^+ . They measure $46.7 \pm 0.4 \pm 0.2 \text{ MeV}$ for an admixture of B^0 , B^+ , and B_s , and use the shape of the photon line to separate the above value.

⁴ HAN 85 is for $E_{cm} = 10.6\text{--}11.2 \text{ GeV}$, giving an admixture of B^0 , B^+ , and B_s .

$| (m_{B^{*+}} - m_{B^+}) - (m_{B^{*0}} - m_{B^0}) |$

VALUE (MeV)	CL%	DOCUMENT ID	TECN	COMMENT
<6	95	ABREU	95R DLPH	$E_{cm}^{ee} = 88\text{--}94 \text{ GeV}$

B^* DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad B\gamma$	dominant

B* REFERENCES

ACKERSTAFF	97M	ZPHY C74 413	K. Ackerstaff <i>et al.</i>	(OPAL Collab.)
BUSKULIC	96D	ZPHY C69 393	D. Buskulic <i>et al.</i>	(ALEPH Collab.)
ABREU	95R	ZPHY C68 353	P. Abreu <i>et al.</i>	(DELPHI Collab.)
ACCIARRI	95B	PL B345 589	M. Acciarri <i>et al.</i>	(L3 Collab.)
AKERIB	91	PRL 67 1692	D.S. Akerib <i>et al.</i>	(CLEO Collab.)
WU	91	PL B273 177	Q.W. Wu <i>et al.</i>	(CUSB II Collab.)
LEE-FRANZINI	90	PRL 65 2947	J. Lee-Franzini <i>et al.</i>	(CUSB II Collab.)
HAN	85	PRL 55 36	K. Han <i>et al.</i>	(COLU, LSU, MPIM, STON)